UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

ADVANCED ANALYTICS, INC.,

Plaintiff,

-against-

CITIGROUP GLOBAL MARKETS, INC., et al.,

Defendants.

04 Civ. 3531 (LTS)(HBP)

OPINION AND ORDER

PITMAN, United States Magistrate Judge:

This matter has been referred back to me for reconsideration of that portion of my Order dated October 4, 2007 (the "Order") which denied plaintiff's application to compel production of defendants' development and testing files. I understand the reference to permit reconsideration of the Order de novo. For the reasons set forth below, I vacate that portion of my Order that denied the application to compel production of defendants' development and testing files and grant the application.

This action arises out of plaintiff's efforts to license a software product called Accelerated Convergence Expert ("ACE"). According to the complaint, ACE is a "software product that [permits the user to] determine the present value of [mortgage backed securities] and other 'path' dependent financial instruments with far more accuracy than existing methods . . . ."

(Compl. ¶ 20).[1] In 1997, plaintiff and defendants' predecessor, Salomon Brothers Inc. ("Salomon"), entered into a Mutual Non-disclosure Agreement ("NDA") (A.[2] 59-65) to permit Salomon to test ACE to determine whether it would license the product for incorporation into its Yield Book ("YB") product. The YB is a software product that defendants license and which enables users to price mortgage-backed and other securities. The NDA permitted Salomon to use ACE "[t]o evaluate the software products of [Advanced Analytics, Inc. ("AAI")] with the models of Salomon, and to validate the applicability of the software products of AAI for the production and research of Salomon" (A. 59). No other uses of ACE by Salomon were permitted under the NDA (see A. 60). Salomon declined to license ACE at the conclusion of the test period, and the NDA required that Salomon return to plaintiff all copies of ACE in its possession (A. 62).

An elementary understanding of ACE and the YB is relevant to the instant dispute. Pricing mortgage-backed securities is a difficult undertaking due to both the possibility of defaults if interest rates rise and the possibility of pre-payment through re-financing if interest rates decline. Accord-

[1]Despite plaintiff's claims about the allegedly unique and unprecedented benefits of ACE, plaintiff has, apparently, been unable to convince any one to license ACE.

[2]Citations to "A." followed by a number refer to the appendix of record material annexed to the Declaration of Jacob M. Polakoff, dated October 19, 2007.

ingly, the process by which ACE and YB price such securities is complex and based on aggregating the results of multiple interest rate scenarios. There appears to be no dispute concerning the following generalized description of the process:

> (1) numbers called "seeds" are fed into a . . . number generator,[3] (2) the . . . number generator produces a sequences of . . . numbers, (3) mathematical techniques known as "variance reduction" are applied to the random numbers, which results in a sequence of numbers to be used to construct the valuation scenarios . . . , (4) the [sequence of numbers is] used to construct securities valuation scenarios that differ from one another depending upon interest rate changes over time and other variables (each scenario is referred to as a "path"), (5) the cash flows that the security can be expected to generate are estimated for each segment of each path by analyzing the interest rate and slope of that segment, (6) the estimated cash flows for each segment of a given path are discounted and aggregated to determine the total present value of that path, and (7) the present value of all paths are averaged to arrive at an estimated value of the security.

(Defendants' Opposition to Plaintiff's Objection to Magistrate Judge's Discovery Order of October 4, 2007, dated Nov. 12, 2007 at 4). The putative trade secret that plaintiff claims and that

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[3]The parties consistently refer to the number generator and its product as a "random" number generator and a sequence of "random" numbers, respectively. There may be a level of mathematical nuance that has evaded me, but the sequence resulting from the generator is clearly not "random," as that term is conventionally used, i.e., derived without method. See Robert Coveyou, 3 Studies in Applied Mathematics at 70-111 (1969) ("Random number generation is too important to be left to chance."). If one were looking for a truly random series of numbers, they would, presumably, utilize a system similar to that used in various state lotteries.

underlies a principal part of this action is the sequence of numbers that ACE generates at step 3 of the foregoing process.[4]

Given the nature of the trade secret claimed, I had believed that the core inquiry with respect to plaintiff's claims should be the presence or absence of similarities between the ACE sequence and the YB sequences. Defendants have already produced all the relevant YB sequences. If there were no commonality, direct or indirect, between the ACE and YB sequences, I believed there could be no misappropriation. In light of plaintiff's consistent position that its secret is the ACE sequence itself and neither a process for deriving the ACE sequence nor the seeds from which the ACE sequence is derived, I had initially concluded that defendants' research and development files were irrelevant because if plaintiff could not identify some characteristic of

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[4]Plaintiff's counsel has repeatedly and unequivocally identified plaintiff's trade secret as a sequence of numbers, not a method of deriving numbers and not the seeds used to derive the numbers. <u>See</u> Transcript of Proceedings, dated Oct. 1, 2007 at 4-5 (The Court: "[It] is my understanding of the trade secret that AAI is claiming here is a sequence of numbers. Am I correct in that?" AAI's Counsel: "Yes, Your Honor."); Transcript of Proceedings, dated Oct. 1, 2007 at 12 (AAI's counsel confirming that "the sequence is the trade secret here"); Transcript of Proceedings, dated Aug. 21, 2007 at 16 (plaintiff's counsel suggesting that AAI's product "wasn't a method at all. It was just the actual sequences themselves, the numbers that you use to create the interest rate scenarios in every circumstance. It's just a set of numbers."); Transcript of Proceedings, dated Aug. 21, 2007 at 43 (AAI's counsel explaining that the ACE numbers have not changed in years because it is just a set of numbers . . . ."); Transcript of Proceedings, dated Mar. 1, 2006 at 35 (plaintiff's counsel stating that AAI's product is "sequences, not seeds").

defendants' sequences that also existed in plaintiff's sequences, there could be no misappropriation. I now conclude that my analysis was too narrow.

A claim for misappropriation can be established by proof of some species of copying, taking or using. See Dow Jones & Co. v. Int'l Sec. Exch., 451 F.3d 295, 302 (2d Cir. 2006) ("In order to succeed on their misappropriation and unfair competition claims, plaintiffs must establish some wrongful appropriation or use of the plaintiffs' intellectual property."); Roy Export Co. v. Columbia Broad. Sys., Inc., 672 F.2d 1095, 1105 (2d Cir. 1982) ("An unfair competition claim involving misappropriation usually concerns the taking and use of the plaintiff's property to compete against the plaintiff's own use of the same property . . . ."). There is, however, no requirement that the accused use be the principal use of the putative secret. If, for example, defendants independently developed the YB sequences by a methodology unrelated to the ACE sequence, there would still be actionable misappropriation if defendants used the ACE sequence to check the validity of the YB sequences by comparing the results produced by each sequence. If this were the case, there probably would be no trace of the ACE sequence in the YB sequences. Nevertheless, there would be an improper use of the alleged trade secret.

The foregoing analysis is equally applicable to plaintiff's breach of contract claim. In addition to suing for misappropriation of its trade secrets, plaintiff alleges that defendants breached the NDA by using ACE beyond the terms permitted by the NDA. For example, plaintiff alleges that defendants breached the NDA "by generating outputs that were not agreed upon prior to the testing of ACE™" and by retrieving and using those outputs for purposes other than the purposes permitted by the NDA (Compl. ¶¶ 104-06). Plaintiff further alleges that "Defendants breached and violated the [NDA] by transferring, retrieving and/or recovering AAI's Confidential Software Information . . . for purposes other than the Agreed Purposes" (Compl. ¶ 108) and that defendants also breached the NDA "by failing to return to AAI all documents, drawings, and sketches, designs and/or other record bearing media comprising, containing, derived and/or based on Confidential Information (in particular, ACE™ and the trade secrets within), together with all copies thereof, after the completion of the Agreed Purposes and/or after the request by AAI for the return of these materials" (Compl. ¶ 111). Among the documents defendants produced is the notebook of Mikhail Teytel, one of the principal developers of the YB. Teytel's notebook contains several notations that appear to be references to ACE. These references could support an inference that Teytel made some use of ACE in connection with his work concerning the YB. If

defendants did use the ACE sequence to verify the accuracy of their allegedly independently developed sequences, there would be a violation of the NDA.

In their objections to my prior ruling, plaintiff also claims that the "distributions" yielded by the ACE sequence and the YB sequences is sufficiently similar to suggest copying and to justify production of the development and testing files. At this point, the relationship between the "distributions" and the sequences is far from clear.[5] Accordingly, I express no opinion concerning what relevance, if any, the distributions have to plaintiff's claims.

Finally, defendants claim that the present dispute is merely an attempt to reargue a claim that has been rejected on multiple occasions. I disagree. The prior rulings cited by defendants relate to plaintiff's efforts to obtain documents concerning defendants' selection of seed numbers. The current application seeks a broader range of documents, and is not constrained by my prior rulings concerning a narrower group of documents.

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[5]I held a conference on October 1, 2007 to discuss the dispute addressed herein and asked plaintiff's counsel to explain what plaintiff meant by the term "distribution." The response yielded four pages of transcript, which I annex hereto as an appendix. I note that the discussion in the annexed four pages only attempts to define "distribution." It does not explain how the distribution evidences the use of a particular sequence of numbers. That discussion continued at length during the October 1 conference.

Accordingly, that portion of my Order dated October 4, 2007 which denied plaintiff's application to compel production of defendants' development and testing files is vacated. Defendants are directed to produce their development and testing files to plaintiff within ten (10) days of the date of this Order.

Dated: New York, New York
June 26, 2007

SO ORDERED

HENRY PITMAN
United States Magistrate Judge

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necessary to track every single one of the four different versions of ACE. There was a thirty-two, two sixty-fours, one one twenty-eight. So we can't tell on the basis of what we've got right now, Your Honor, without more discovery, as to which portions of ACE, which sequence, which interval or -- time interval or dimension, was being tracked.

We can tell that if we get further discovery, because what we're missing right now is the testing information.

MR. MOORE: Your Honor, I hate to interrupt, but Dr. Wong just entered the room, and this information was marked as highly confidential because it relates to the development of the defendant's product. I would ask that Dr. Wong leave the room. Plaintiff marked this as highly confidential, recognizing the nature of the material.

THE COURT: Well, I mean, you are talking about what Tatel did. I think Mr. Moore is correct. All right. He can wait in the jury room if he's more comfortable in there.

MR. COLLINS: Your Honor?

THE COURT: Yeah.

MR. COLLINS: If I may, my friend Mr. Munves is itching to explain better than I am distribution. Would you mind terribly if he did?

THE COURT: Not at all.

Go ahead.

MR. MUNVES: Thank you for indulging me, Your Honor.

Sometimes I just can't help myself. I think --

THE COURT: Scratch your itch.

MR. MUNVES: -- the distribution question is a good question, and it's confusing. In order to understand it, we have to take a step back to understand exactly what the sequence is trying to accomplish and how mortgage-backed securities are priced in the first place.

You may recall that in previous testimony, hearings, it's undisputed that the way they price mortgage-backed securities is they take a distribution, a normal bell curve distribution. They take a bell curve distribution which is the distribution of interest rate scenarios if you were to generate every single possible interest rate scenario in the future that there could possibly be.

Now, how do you know what that is? The Court has asked in the past well, gee, how do you predict what interest rates are going to be. I mean, isn't it all just speculation? The way they do it is they're not really predicting what interest rates are going to be in the future. The program doesn't. The sequences don't. What they do is they take the market information about current interest rate scenarios.

In other words, they take the treasury yield curve. They start with that. What is it today on October 1st, 2007? That's a starting point. Then -- and the reason you have to do it this way is because mortgages can be prepaid, so --

THE COURT: Um hmm.

MR. MUNVES: -- interest rates go up, people don't prepay their mortgages, and the interest keeps coming.

THE COURT: Yeah.

MR. MUNVES: If interest rates go down, people prepay their mortgages. Interest rates [sic] stop coming. So you need to run the potential future interest rate scenarios.

Now, knowing today's yield book -- I'm sorry, knowing today's yield curve is just a start. The other thing you need to know is well, how far -- how far can interest rates vary from today's interest rates, right? I mean, that's one of -- how -- what's the variability? What is the volatility? They call it volatility, variability.

How far from -- today the interest rate for a one-year mortgage is five percent. How far can that vary? So -- you know, because that -- that's -- that's -- that's what today's market is saying it is one year from now. So there -- but everybody knows that that's just a guess.

THE COURT: Um hmm.

MR. MUNVES: So they go back to the market and they say okay, there are instruments out there called caps and floors, which is a fancy way for naming securities that allows somebody to speculate on what interest rates are going to be a year from now. And for example, a cap might say if interest rates go up a half a percent in a year, or more than a half a

percent a year, I will pay you the difference, I will pay you all the interest above the five percent.

Anyway, so they can get volatility from that, so they take that volatility number and they take the yield curve number, and they figure out well, what is the expected distribution of interest rates based on what the market is saying.

Now, the purpose of the Monte Carlo simulation is so you don't have to project out all possible future interest rates, because, don't forget, at the end of the day, the way the pricing model works is you take the future interest rate scenarios, the possible future interest rates. You run it through a prepayment model.

The prepayment model tells you what's a particular mortgage-backed security going to do if interest rates go up or down by a percent, or two percent, or three percent, or five percent, or all -- and -- and -- and then it gives you the present value of that mortgage-backed security based on all the possible future interest rate scenarios.

And then it averages the present value of all those possible future interest rate scenarios to get the current price. And the key here is averaging. So what you want to do is, rather than run all possible future interest rate scenarios under the bell curve, what you want to do is you want to pick a representative sample of those future interest rate scenarios

that could happen, maybe instead of a hundred bazillion, if you can do it -- if you could do it with ten, that would be terrific.

But nobody can. Dr. Wong found sequences that would generate a representative sample of future interest rate scenarios at thirty-two paths that is very, very similar to what you would get if you averaged a million paths. So you generate a representative sample.

THE COURT: Um hmm.

MR. MUNVES: And that's a distribution. The way the interest rate paths are distributed within the bell curve -- that's the distribution.

So -- and the reason a distribution -- close distributions can work is because at the end of the day, you're averaging the prices that are generated by each one of those interest rate scenarios, so if one is up by a -- off by five dollars in one direction, if the other one is off in the opposite direction by five percent, it doesn't matter. At the end of the day, you end up with the same price or a similar price.

So the --

THE COURT: Well, I guess the question, though, I still have, though, is if the trade secret, though, is a sequence of numbers, how does that relate to the distribution? The distribution -- if I understood you --